REPORT ON

WALKER MINING COMPANY

BY

V. A. HART

November 17, 1915.

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International Smelting Company
Tooele Plant

WM. WRAITH
GENERAL MANAGER

SALT LAKE CITY, UTAH, Nov. 17, 1915.

Mr. Wm. Wraith, General Manager,
International Smelting Company,
Salt Lake City, Utah.

Dear Sir:-

The following report is on the property belonging to the Palmer Mining Company, an Arizona Corporation.

This property is located about twenty-five miles north of Portola, a station on the Western Pacific Railroad, in Plumas County, California.

CLAIMS, TIMBER, WOOD, WATER:

The Company has 34 or 35 claims, some fractions were recently taken up, 10 of which are I am told, patented. Claims and surrounding country are covered by a heavy growth of pine, fir and balsam timber, sufficient to last the mine for an indefinite period.

The mill claims have ample spring water for all ordinary mill and domestic purposes.

PRESENT CONDITIONS:

The mine is situated at an altitude of about 6700 feet, the mill some 800 feet lower and distant about 4700 feet by tram. (Mill building partially completed - tram not yet erected.)

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There are heavy snows to contend with in winter, the average depth being 8 to 10 feet, while as much as 15 feet has been known to be on the ground at one time at the mine and in Portola.

If the roads are kept open by regular traffic, the winter time will be the most favorable for the hauling of the concentrates, as the roads are practically over level ground the greater portion of the way. No slides or heavy repairing of roads to contend with once they are in good condition.

MORNING, DEVELOPMENT, ETC:

The property is opened up by a vertical shaft 155 feet in depth with a 95 ft. drift on the 65 foot level and about 45 feet of drifting on the 155 foot level besides numerous crosscuts. (See maps, plan and section.)

A tunnel driven sometime ago also is shown. This, however, did not cut the main ore body. Croppings are shown some 40 feet south of the tunnel face which, I believe, are on the continuation of the present ore shoot.

The vein is a fissure in a hard, heavy, dense, dark feldsitic rock, very likely a diorite. The ore is a heavy primary sulphide carrying about 12% iron. The copper is in the form of chalcopyrite with gold and silver values. At places on the upper, or 65 foot level, a little secondary bornite was seen.

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The diorite is very blocky, the interstices of which are filled with the siliceous iron ore. The diorite is also heavily impregnated, possibly replaced, by the same material. Some portions, resembling massive diorite, I find to run ore. This class of ore should make to great depth.

The hang wall is very well defined and should be easy to mine to - the foot wall, however, of the ore is not easy to determine as the values grow less to the west (strike of the vein approximately east-west, dip 70° to 80° to the south). There is a wide mineralized zone lying to the north of the minable portion of the vein, that contains much low grad material. This, however, cannot be classed as ore at this time and will not be further considered.

On the edge of the slope of the hill which rises at an angle of about 15° is a very likely looking mass of gossan. Above this and extending for 1500 feet or more is a heavy iron outcrop, limonite and hematite. This outcrop is from 60 to 150 feet in width, very strong and promising.

A small portion, 10 feet in width, approximately above the continuation of the present ore shoot showed 0.80% cu.

The present ore shoot, as developed, is now beyond the limits of the gossan on the surface. If ore makes under this iron capping there is almost no end to the possibilities of the property. I do not think, however, that it will do so, but it is well worth proving up.

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TONNAGE, GRADE, ETC:

A study of the accompanying maps will show the following: Ore by weighted averages runs:

Au .0099 oz., Ag. 5.29 oz., Cu 6.36%.

This includes only crosscut averages, all crosscut samples being weighted according to their length, four crosscuts on the 65 ft. level and three on the 135 ft. level being used. The two levels were then combined by straight arithmetical average, although the 65 ft. level is opened up for about twice the length of the 135 foot level.

The width of the ore is over ten feet. You will note crosscuts on the lower level that are still in ore. I use 10 feet, however, in tonnage calculations. This is very conservative.

You will remember that we suggested some development in this property to fully determine the width of the ore - the blocky condition being such that I was afraid that the crosscut, as run, was on a cross break. The later crosscuts still show the same blocky condition but they have the ore. The various crosscuts show as follows:

First or 65 ft. level.

	Width ft.	Au	Ag	Cu
(S) Shaft Crosscut	+7'	.05	6.35	4.07
(1) Crosscut No. 1	13'	.006	4.80	8.66
(2) " " 2	9.8'	.05	2.31	9.06
(3) " " 3	12.5'	.015	1.94	6.07
General Average for level	10.57'	.0390	3.41	7.55

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crosscut or 125 ft. level.

	Width ft.	Au	Ag	Cu
North crosscut	+11.0'	.044	3.24	8.105
Middle "	10.0'	.057	2.75	4.90
South "	+7.0	.04	3.70	6.45
General Average for level	+9.55	.04	3.18	5.37

Note: In shaft crosscut only 5.6 feet were sampled, but the ore extended into the shaft so 7 feet of ore was allowed.

In No. 1 crosscut 15 feet were sampled, but a width of only 13 feet was allowed.

The north and south crosscuts are still in ore.

General average of both levels.

Width 9.95 ft., Au .0399 Ag 3.29 Cu 6.36

I believe that a deposit of this nature can be safely estimated to a depth of fifty feet below the present workings, or to a total depth of 175 feet. The extreme length of the ore shoot as now opened up is 115 feet. Ore extends practically to the surface, but I deduct 10 feet, giving me a block 165 ft. deep x 115 feet in length by +10 feet in thickness. Allowing 11 cu. ft. per ton (it will run less) this shows 17,250 tons of very probable ore, a portion of which is already mined.

Under a 14 cent copper market, this ore should net in the mine $5.07 per ton. To retire $100,000.00 worth of preferred stock will, at $5.00 net per ton, require 20,000 tons. A horizontal extension of the above ore body for 18 feet will

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bring the tonnage up to that figure. I feel that it will do much more than that.

On a 15 cent copper market, about 10,000 tons should net the $100,000, while on a 15 cent market about 14,000 tons would be needed.

COST OF WORK AND WATER HAUL:

Larger drills have shown that this ore can be handled at a lower figure than indicated by the results obtained with small butterfly type machine.

The country rock works very hard even with large drills but little of this need be moved except in shaft sinking and crosscuts to the ledge. I believe that the figures used, viz., sinking $40.00, drifting $10.00 and raises $6.00 per foot can be bettered except possibly the sinking as the drifts and raises will either be in ore or be abandoned.

The hauling cost of concentrates was estimated at $6.50 per ton. A contractor who has hauled in that county for 15 years estimates the cost at $7.50 per ton under present road conditions, but he allows himself a clear profit of $1.50 per span of horses.

The Feather River Lumber Company is very likely to extend their logging line about 8 to 9 miles into that section next year. This would mean a 15 to 16 mile haul which should reduce the cost to about $5.00 per ton.

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In any event, an expenditure of from $5,000.00 to $10,000.00 on roads along the soft Grizzly Creek Meadows will be advisable as soon as the tonnage will justify same.

RECOMMENDATIONS:

I would recommend the taking over of 66,000 shares of preferred stock carrying 7% interest and share per share bonus of common stock.

I would further recommend the optioning of 250,000 shares of common stock for the sum of $40,000.00 due on July 1, 1916.

The optioning of 315,000 shares of common stock at one dollar a share seems at this time to be a high figure but I consider it advisable to do it by as there is no telling what the development to the north may show.

Under these options we are to have the privilege of prosecuting development work as we see fit, i.e., the Yaller Mining Company is to do this work for us at cost or not to exceed the figures above stated. We are to have the right to take the property over and push this development in case it is not crowded to suit us.

The first development suggested would be the sinking of the shaft to a depth of 175 feet or 50 feet further than it now is and then drive both ways on the 175 ft. level and to the north on the present 65 foot level which is now gaining about 1 foot of back for every 4 feet driven.

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If ore of a commercial grade is encountered for a length of four hundred feet or more on these two levels then the sinking of the shaft for an additional two hundred feet with drifting both ways and continued drifting on the 175 foot level will be advised.

The first development suggested - 80 feet of sinking and approximately 700 feet of drifting with probably two raises for air of about 100 feet each will cost not to exceed $10,000.00. This or even less will show us whether we wish to go further and will show whether or not the taking over of the 250,000 shares for $40,000.00 is advisable. With proper equipment, this work should be done in about two and a half months. Work out here is still in the experimental stage so no accurate estimate as to how much can be done is possible.

The further sinking of 200 feet, if justified by the showing above, with some drifting on the 275 level and further drifting on the 175 foot level, will not show a net value of a million and a quarter dollars blocked, but there may be changes in width and values that may justify the taking over of this stock. Should the 575 level hold to grade and size and the drifts to the north still show well, the chances are that in a deposit of this nature, one would be justified in recommending the taking over of the 250,000 shares of stock.

I realize fully that the time is too short to expect

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to block out the price at which the property is rated, but I do believe that it is possible to do sufficient work to justify the purchase price even if it is not completely blocked out.

Water is an unknown factor which may completely upset our calculations.

The proposition sums itself up to me as being well worthy of a trial.

All of the above is based on the supposition that titles, stock issues, etc., are all sound.

Respectfully submitted,

W. A. Hark

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WALKER MINE

Memorandum

November 15, 1915.

Average ore - 10' + in width. All crosscut samples.

Au .0399, Ag 3.29, Cu 6.36%.

Iron on mill tests runs 12.73%.

Concentration 3½ into 1 on 93% extraction on Cu. 85% extraction on Ag and 75% extraction on Au. (Mill tests show a greater extraction.)

Smelter Value:

Cu - 20¢ @ market - 2½ cents.

Ag - 95% @ market (50 cents est.)

Au - @ $19.00 per ounce.

Value per ton concentrates:

	Cu @ 14¢	Cu @ 15¢	Cu @ 16¢
	$52.20	$56.14	$60.08
Wagon Haul	$6.50		
Freight	6.40		
Treatment	3.27		
	$16.17	$16.17	$16.17
Net value per ton of concentrates at Smelter.	$36.03	$39.97	$43.91
Gross Value per ton of ore at mine	$10.32	$11.42	$12.55

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	Cu @ 14¢	Cu @ 15¢	Cu @ 16¢
Costs			
Mining	$3.75		
Development	.35		
Framing	.16		
Milling	1.00		
	$5.25	$5.25	$5.25
Net value per ton of ore in the mine under 14 to 16 cent copper market	$6.07	$6.17	$7.30

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Haulage costs

Distance 28.4 miles to mill from Portola.

(A possible reduction to 14 to 16 miles if Feather River Lumber Co. extends their line, as they will soon be compelled to do.)

Roads - part of the year a portion, or about 5 miles, will be soft. - should be graded.

Costs: On basis 10 up - 10 tons per trip.

10 Horses @ $1.00 each, feed and shoes,	$10.00
Driver	4.00
Driver's board and wagon upkeep	1.50
Man loading into cars 1/3 time (3 outfits)	1.00
Profit on outfit	2.50
	$19.00

One round trip in three days, no rest days allowed. Extra horses must be fed and corral men paid.

10 tons @ $57.00, or $5.70 per ton of concentrates.

* * * * * * * * * * * * *

Freight rates from Portola to Keeler:

Valuation per ton	$40.00	$50.00	$60.00	$70.00
	$5.50	$6.00	$6.40	$6.75

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Mining, Development, Tramming, Milling.

Mining and development as on ore shoot 10 feet wide ±300 feet long. Present shaft 125 feet deep with 95 feet of drifting on the 65 ft. level and 45 feet on 125 ft. level besides crosscuts.

Sinking 50' @ $40.00 per foot - - - - - - - - - - - -	$2,000.00
Drifting 500' @ $10.00 " " - - - - - - - - - - - -	5,000.00
Raises 200' @ $6.00 " " - - - - - - - - - - - -	1,200.00
Crosscut on 175' level 35' @ $10.00 per foot - - -	350.00
Chutes and Timbering, 20 @ $40.00 each - - - - - -	800.00
	$9,350.00

Block opened by the above 300' long +10 ft. thick, by 165 ft. high - approximately 45,000 tons. Allowing 1/4 waste - Cost per ton 35¢.

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